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Research Article

Identification and Documentation of Transfusion Related Adverse Events, Clinical Audit on Implementation of Haemovigilnce in Public Sector Hospitals

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Abstract

Objective: To assess the frequency and severity common transfusion related adverse events and to assess the knowledge and compliance of clinicians involved in transfusion with the process of sending proper transfusion reaction workup.

Methods: The retrospective audit was conducted at blood bank of regional blood center Shaheed Benazirabad, Sindh, Pakistan with associate hospital based blood bank. Transfusion reaction forms received from March 2020 to March 2023. These forms were analysed for timely identification, proper documentation of type and severity of transfusion reaction, type of blood component, time in which it was received by blood bank, whether or not all required samples were provided.

Results: Study showed that only 0.04% reactions related to transfusion were reported with reaction forms and Blood bags plus tubes and post-transfusion EDTA samples

Conclusions: Incidence of transfusion reactions and implementation of haemovigilance and compliance of clinicians involved in transfusion that can be further improved by continuous education.

INTRODUCTION

Blood transfusion is an integral component of the health Service system but transfusion carries a risk of transfusion reaction that is often underdiagnosed. Appropriate compliance to rationale use of transfusion, bedside blood transfusion practices would help in avoiding adverse transfusion outcomes and proper timely documentation would improve management of these transfusion reactions.

This audit aims to assess the compliance of bedside blood transfusion practices and reporting of transfusion related adverse events that is a step towards heamovigilance in a public sector hospital of Sindh, Pakistan.

METHOD AND RESULTS

Study analyse duration of 3 years that is from March 2020 to March 2023, during that period all patients admitted to hospital for blood transfusion were included, total requests received around 55030 includes, 32354 red cell concentrate for adults and pediatric patients, 6613 whole blood, 11646 fresh frozen plasma, 3856 platelets and 561 cryoprecipitate issued to patients with different indications. Only one mortality related to transfusion was observed in this study. Table-1 shows frequency of transfusion reactions reported 0.04% that is significantly low.

DISCUSSION

Transfusion of blood products is required for different indications but related risk and benefits should be addressed mainly documentation of transfusion related adverse events that is the main indicator to improve quality of transfusion chain. Although Transfusion of blood products is a lifesaving procedure but noninfectious adverse events related to transfusion are common that are divided to acute adverse events that are reported within 24 hours of transfusion and delayed that appeared late [1].

Documentation of acute transfusion reactions is a vital component of heamovigilance so that timely corrective and preventive action can be taken [2]. In this study reporting f transfusion related adverse events has been observed in public sector hospital, Sindh, Pakistan, Hospital based blood bank

Table-1: Frequency of Transfusion Reactions Reported 0.04% That Is Significantly Low

Blood products issued	RCC	WB	Platelets	FFP	Cryoprecipitate
Number of units issued	**n=32354**	**n=6613**	**n=3854**	**n=11646**	**n=561**
Number of Transfusion reaction reported n=27 (0.04%)					
Type of transfusion reaction reported					
FNHTR n=10 (37%)	✓	✓			
Allergic n=5 (18.5%)	✓	✓		✓	
AHTR n=3 (11%)	✓	✓			
TRALI n=1 (3.7%)				✓	
TACO n=1 (3.7%)	✓		✓		
TAS n=1 (3.7%)					
Non specific n=6 (22%)	✓	✓		✓	

worked with civil hospital since October 2019 and with increasing awareness by sessions/lectures regarding transfusion indication of different products and proper reporting of transfusion related adverse events started from March 2022. This article covers data of last 3 years, during that period around 55030 blood products for adults and pediatric patients with different indications. Transfusion related adverse events mainly reported with Red cell concentrate and whole blood. Majority of plasma issued to hemophilic centres so adverse events documentation was not reported from those centres.

This study showed that only 0.04% adverse events of transfusion were documented, still there is underreporting of related adverse events. Reported events showed high incidence febrile non hemolytic transfusion related acute reaction followed by allergic type of reaction. Reported events again alert clinicians to avoid life threatening type of reaction that is acute hemolytic transfusion reaction. In this article incident reported for AHTR that was due to wrong blood in tube from hospital side and fortunately reaction was reported timely and no severe complication was observed.

Heamovigilance awareness can only mitigate adverse events of transfusion [3]. As per previous literature in public sector hospitals of Sindh Pakistan, transfusion practices has been improved over time and due to safe donor selection, TTI screening; transfusion related infectious adverse events like Hepatitis B, C , HIV , Malaria and syphilis is improving [4,5]. There are limited studies done in Sindh, Pakistan regarding heamovigiliance implementation [6] and as per previous literature there is no any published data regarding heamovigilance implementation in public sector hospitals.

Previous literature supports that these serious adverse events related to transfusion can be improve by raising awareness regarding patient blood management and bed side teaching regarding rationale use of transfusion and identification of correct patient for correct transfusion along with timely documentation of adverse events [7-10] Majority of serious adverse events reported are from hospital side that all are preventable as most common reason is clerical error that leads to wrong blood in tube and wrong transfusion [11] Heamovigilance can only improve safe transfusion chain as per SHOT surveys [12] There is limited data from blood banks and hospitals of Pakistan that are working on heamovigilance, as reporting and documentation of transfusion reaction is a key component of heamovigilance [13,14]. There is no previous study done in Pakistan that is working on Haemovigilance in public sector hospitals that is a major challenge as there is limited knowledge that is the main concern for transfusion safety.

CONCLUSION

Heamovigilance implementation by reporting/documenting adverse events related to transfusion is a key to maintain safe transfusion chain in public sector hospitals that will significantly improve management of these adverse events.

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